What is claimed is:

1. An endoscope system, comprising:

a light guide including a plurality of optical paths;

a low-coherent light source that emits low-coherent light beams, said low-coherent light source being provided at a proximal end side of said light guide, the light beams emitted by said low-coherent light source being incident on said plurality of optical paths, respectively;

an interferometer unit, including:

a beam splitting element that splits each of the low-coherent beams emitted from the distal end of said light guide and emits one split beam of each of the beams to an object;

a reference optical system that guides the other split beam of each of the beams;

a reflector unit that reflects the beams guided by said reference optical system toward said beam splitting element; and

a light detecting device that detects an interfered beam generated by interference, at said beam splitting element, between the beam reflected by the object and the beam reflected by said reflector unit;

a driving unit that moves said interferometer unit toward/away from the object; and

a signal processing system that generates a tomogram based on signals detected by said light detecting device.

2. The endoscope system according to claim 1, wherein said reference optical system comprises an optical member having a high refractive index.

3. The endoscope system according to claim 1, wherein said reference optical system comprises a gradient index optical member whose refractive index is greater at a portion closer to said reflector unit.

4. The endoscope system according to claim 3, wherein the refractive index of said gradient index optical member, at a beam splitting element side, has the same refractive index as said beam splitting element.

5. The endoscope system according to claim 1, wherein said interferometer unit is accommodated in the distal end portion of the endoscope.

6. The endoscope system according to claim 1, wherein said driving unit includes:

a driving force supply that is provided at the proximal end side of said endoscope and supplies driving force; and

a force transmitting member that is connected to said driving force supply and said interferometer unit, said force transmitting member transmitting the force supplied by said driving force supply and moves said interferometer unit.

7. The endoscope system according to claim 1, wherein said light guide is composed of a fiber array having a plurality of single-mode optical fibers arranged in parallel.

8. The endoscope system according to claim 7, further comprising:

a collimating lens array that is formed with a plurality of lens surfaces that collimates each of the beams emitted from said fiber array into parallel light beam, each of said parallel light beams being directed toward said beam splitting element; and

a collective lens array including a plurality of lens surfaces that converges one of the parallel beams split by said beam splitting element on the object.

9. The endoscope system according to claim 1, wherein said low-coherent light source includes a super-luminous diode.

10. The endoscope system according to claim 1, further comprising:

an illuminating optical system that emits at least one of visible light, and excitation light which causes biotissues to fluoresce, toward the object;

an objective optical system that converges the light from the surface of the object to form an object image; and

an image capturing system that captures the optical image formed by said objective optical system.

11. The endoscope system according to claim 10, further comprising:

a visible light source that emits visible light;

an excitation light source that emits the excitation light; and

a light source switching system that causes one of the visible light and the excitation light to be incident on said illuminating optical system,

wherein said objective optical system forms a normal light image of the object when the visible light is incident on said illuminating optical system, and

wherein said objective optical system forms a fluorescent light image of the object when the excitation light is incident on said illuminating optical system.

12. The endoscope system according to claim 10, further comprising a displaying device that displays the object image captured by said image capturing system, and the tomogram generated by said signal processing system.